

Appl. No. 10/606,924
Response dated Sep. 6, 2005
In Reply to Office Action of May 3, 2005

REMARKS

Applicants would like to gratefully acknowledge the Examiner's indication that claim 18 contains patentable subject matter. Applicants have overcome the objections as set forth below with respect to claim 18. Accordingly, it is respectfully submitted that claim 18 is in condition for allowance.

The Office Action objects to claims 1-5 and 18. With respect to claims 1-5, the Office Action suggests that "the channel-coded" be replaced with "the plurality of channel-coded". However, the claim already recites "the plurality of parallel channel-coded symbol streams". Thus, there appears to be no ambiguity or lack of clarity with respect to the claimed subject matter as set forth in claim 1. The Office Action also suggests that, in claim 18, the phrase "de-interweaver" be replaced with "de-interleaver". Applicants have so amended claim 18. It is respectfully requested that the objections be withdrawn with respect to claims 1-5 and 18.

Claim 5 stands rejected under 35 U.S.C. § 112, ¶ 1, as failing to comply with the written description requirement. In particular, the Office Action notes that various communication protocols recited in claim 5, as originally filed, were not recited in the specification. Applicants have amended the specification to include the elements recited in claim 5. Support for the amendment can be found, for example, in claim 5, as originally filed, which makes up part of the written disclosure as originally filed. It is therefore respectfully requested that the rejection under 35 U.S.C. § 112, ¶ 1, be withdrawn with respect to claim 5.

Claims 1-4, 6, 9-11 and 13-17 stand rejected under 35 U.S.C. § 102(e) as being anticipated by United States Patent No. 6,584,593 B1 ("Seshadri"). Applicants respectfully traverse the rejection as set forth below.

To anticipate a claim, each and every element must be described in a single cited document. Applicants respectfully submit that each and every element of at least independent claims 1, 6, 13, 16 and 17 are not described in Seshadri. For example, claim 1 recites, in part, "encoding a stream of data according to a turbo multiple trellis coded modulation scheme thereby *generating a plurality of parallel channel-coded symbol streams; space-time encoding the plurality of parallel channel-coded symbol streams*, thereby generating a plurality of space-time-channel-coded symbol streams" (italics added). Seshadri does not describe at least these

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elements as set forth in claim 1. Instead, Seshadri describes a TCM encoder 31 that outputs (via its combiner 314) a *combined, single string of bits* to a space-time encoder 32. See, e.g., col. 2, lines 44-67 and FIGS. 1 and 2 of Seshadri. Applicants respectfully submit that Seshadri does not describe at least these elements as set forth in claim 1.

Similarly, claim 6 recites, in part, "an outer encoder configured to encode a stream of data according to a turbo multiple trellis coded modulation scheme, thereby generating a plurality of channel-coded symbol streams; an inner encoder configured to receive the channel-coded symbol streams and provide space-time coding to the channel-coded symbol streams, thereby generating a plurality of space-time-channel-coded symbol streams". Applicants respectfully submit that Seshadri does not describe at least these elements as set forth in claim 6.

Similarly, claim 13 recites, in part, "channel encoding means for encoding a stream of data according to a turbo multiple trellis coded modulation scheme, wherein the channel encoding means is configured to generate a plurality of parallel channel-coded symbol streams; space-time encoding means for space-time coding the plurality of parallel channel-coded symbol streams, wherein the space-time encoding means is configured to generate a plurality of space-time-channel-coded symbol streams". Applicants respectfully submit that Seshadri does not describe at least these elements as set forth in claim 13.

Similarly, claim 16 recites, in part, "encoding a stream of data according to a turbo multiple trellis coded modulation scheme thereby generating a plurality of parallel channel-coded symbol streams; space-time encoding the plurality of parallel channel-coded symbol streams, thereby generating a plurality of space-time-channel-coded symbol streams". Applicants respectfully submit that Seshadri does not describe at least these elements as set forth in claim 16.

Similarly, claim 17 recites, in part, "an outer encoder configured to encode a stream of data according to a turbo multiple trellis coded modulation scheme, thereby generating a plurality of channel-coded symbol streams; an inner encoder configured to receive the channel-coded symbol streams and provide space-time coding to the channel-coded symbol streams, thereby generating a plurality of space-time-channel-coded symbol streams". Applicants respectfully submit that Seshadri does not describe at least these elements as set forth in claim 17

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For at least the above reasons, it is respectfully requested that the rejection under 35 U.S.C. § 102(e) be withdrawn with respect to the above-identified independent claims and their respective dependent claims (i.e., claims 1-4, 6, 9-11 and 13-17).

Claims 5, 7, 8 and 12 stand rejected under 35 U.S.C. § 103(a) as being obvious over Seshadri in view of other documents cited in the Office Action. Applicants respectfully traverse the rejection as set forth below.

To maintain an obviousness rejection, each and every element as set forth in the claims must be taught by the cited documents. Applicants respectfully submit that a *prima facie* case of obviousness has not been presented since, for example, the teaching deficiencies of Seshadri as discussed above are not made up by the teachings of the other cited documents. For at least the above reasons, the obviousness rejection cannot be maintained.

Furthermore, Applicants respectfully submit that, by teaching an output of the TCM encoder 31 being the output of a combiner 314 which outputs a combined, single string of bits that are then applied to a space-time encoder 32, Seshadri teaches away from the claimed inventions in the above-identified claims. M.P.E.P. § 2145(X)(D)(1) states that "[a] prior art reference that 'teaches away' from the claimed invention is a significant factor to be considered in determining obviousness". Moreover, attempts to combine Seshadri with other documents that attempt to make up for the teaching deficiencies of Seshadri, as discussed above, may then actually *teach away* from the teachings of Seshadri. M.P.E.P. § 2145(X)(D)(2) states that "[i]t is improper to combine references where the references teach away from their combination".

For at least the above reasons, it is respectfully requested that the rejection under 35 U.S.C. § 103(a) be withdrawn with respect to claims 5, 7, 8 and 12.

In view of at least the foregoing, it is respectfully submitted that the pending claims 1-18 are in condition for allowance. If anything remains in order to place the present application in condition for allowance, the Examiner is kindly invited to contact the undersigned at the below-listed telephone number.

FROM McANDREWS, HELD, & MALLOY

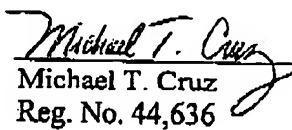
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The Commissioner is hereby authorized to charge additional fees or credit overpayments to the deposit account of McAndrews, Held & Malloy, Account No. 13-0017.

Dated: September 6, 2005

Respectfully submitted,


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